

Wyoming Nutrient Work Group

Purpose and Function, Nutrient Reduction Strategy

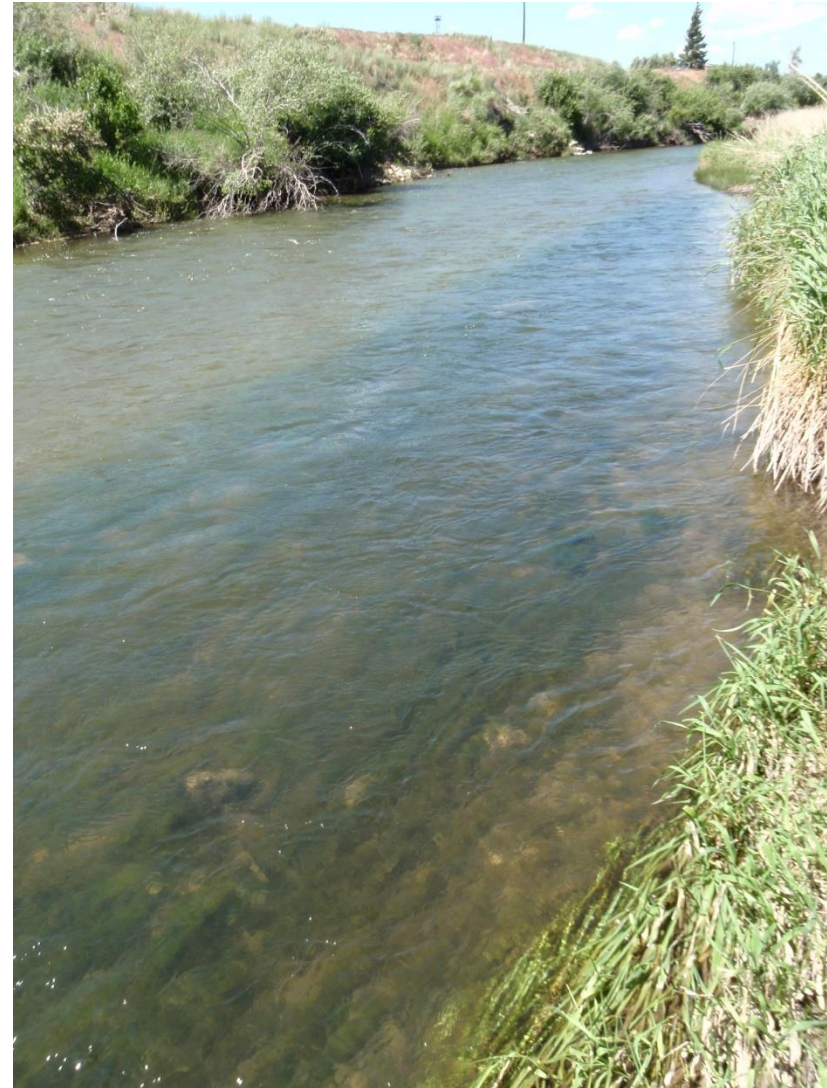


Wyoming Nutrient Work Group

May 28, 2015

Outline

- Background on Nutrient Pollution
- Nutrient Reduction Strategy
- Stakeholder Group

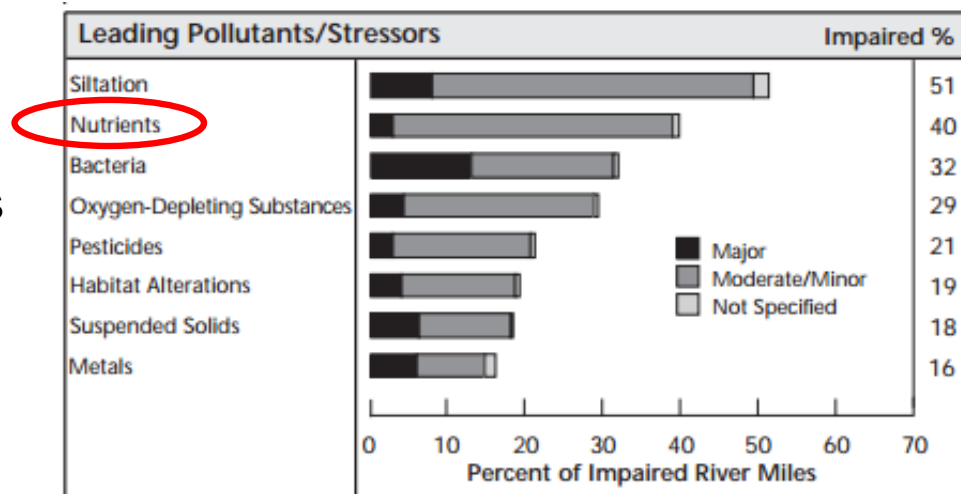


Nutrient Pollution History

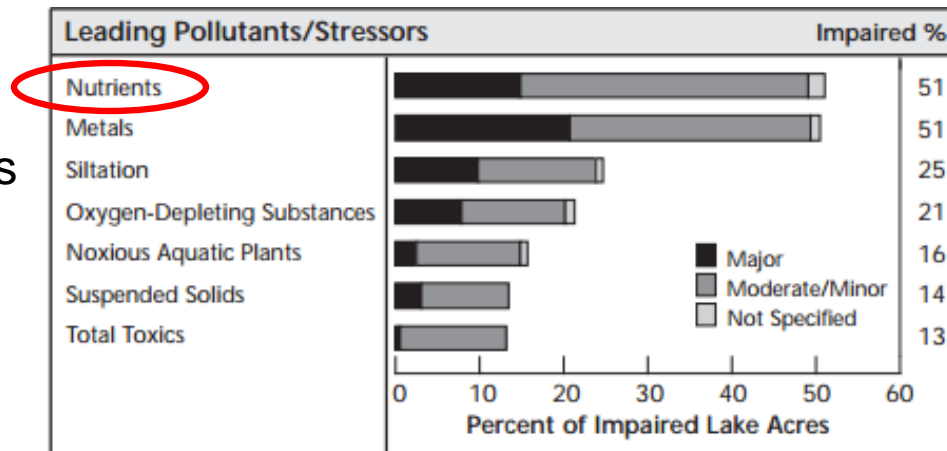


1996: In National Water Quality Inventory Report to Congress, EPA reported that nutrients were among the leading causes of water quality impairments in the U.S.

Streams and Rivers



Lakes and Reservoirs



Nutrient Pollution History



1997: EPA initiated Clean Water Act Plan (CWAP) to address excess nutrients in the nation's surface waters.

CWAP included development of numeric criteria as a component.

Due to the complexity and variability in nutrient/response relationships, most states historically used narrative standards to protect designated uses from nutrient pollution (i.e., waters shall be free from)

Numeric Nutrient Criteria



Numeric criteria for total nitrogen and total phosphorus and response parameters (e.g., chlorophyll) are expected to more effectively protect designated uses from nutrient pollution because:

- Do not require a site-specific analysis for each action
- Can be incorporated into discharge permits
- Can be used to assess waters for impairment
- Can be used to develop Total Maximum Daily Loads (TMDLs)
- Can be used to facilitate watershed protection and restoration

Nutrient Pollution History



2015

National Summary Causes of Impairment in Assessed Rivers and Streams

[Description of this table](#)

Cause of Impairment Group	Miles Threatened or Impaired
Pathogens	166,518
Sediment	119,412
Nutrients	106,305
Mercury	102,802
Organic Enrichment/Oxygen Depletion	88,106

National Summary Causes of Impairment in Assessed Lakes, Reservoirs, and Ponds

[Description of this table](#)

Cause of Impairment Group	Acres Threatened or Impaired
Mercury	7,980,929
Nutrients	3,064,441
Polychlorinated Biphenyls (PCBs)	2,895,093
Organic Enrichment/Oxygen Depletion	1,456,322
Turbidity	1,358,516

Nutrient Criteria Development Plan



WYOMING NUTRIENT CRITERIA DEVELOPMENT PLAN

**Final
April 4, 2008**



**Prepared by
Wyoming
Department of Environmental Quality**

and

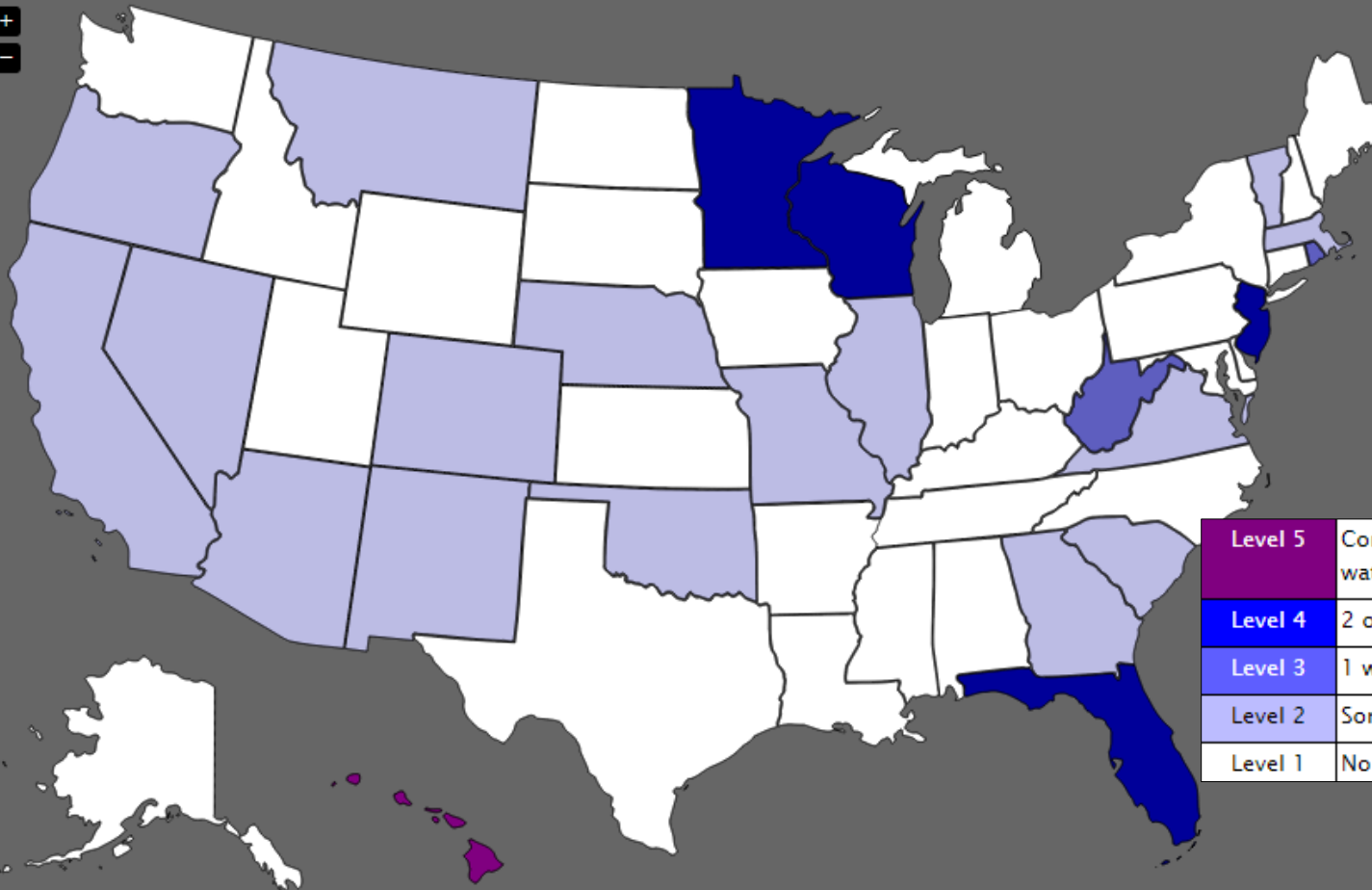
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Owings Mills, MD 21117**

National Status of Nutrient Criteria



States with Total Nitrogen or Total Phosphorus Criteria

1998 2008 2013 2014 Current 2015* 2016*



Level 5	Complete set of N and P criteria for all watertypes**
Level 4	2 or more watertypes with N and/or P criteria
Level 3	1 watertype with N and/or P criteria
Level 2	Some waters with N and/or P criteria
Level 1	No N and/or P criteria

April 2015

2011 EPA Framework Memo



- Outlines key elements/building blocks of programs effective in addressing nutrient pollution
- Promotes conversation among states and stakeholders on how best to proceed to achieve near term and long-term reductions in nitrogen and phosphorus pollution
- Encourages collaborative approach between federal, state, local partners and other stakeholders



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 16 2011

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions

FROM: Nancy K. Stoner
Acting Assistant Administrator

TO: Regional Administrators, Regions 1-10

This memorandum reaffirms EPA's commitment to partnering with states and collaborating with stakeholders to make greater progress in accelerating the reduction of nitrogen and phosphorus loadings to our nation's waters. The memorandum synthesizes key principles that are guiding and that have guided Agency technical assistance and collaboration with states and urges the Regions to place new emphasis on working with states to achieve near-term reductions in nutrient loadings.

Over the last 50 years, as you know, the amount of nitrogen and phosphorus pollution entering our waters has escalated dramatically. The degradation of drinking and environmental water quality associated with excess levels of nitrogen and phosphorus in our nation's water has been studied and documented extensively, including in a recent joint report by a Task Group of senior state and EPA water quality and drinking water officials and managers.¹ As the Task Group report outlines, with U.S. population growth, nitrogen and phosphorus pollution from urban stormwater runoff, municipal wastewater discharges, air deposition, and agricultural livestock activities and row crop runoff is expected to grow as well. Nitrogen and phosphorus pollution has the potential to become one of the costliest and the most challenging environmental problems we face. A few examples of this trend include the following:

- 1) 50 percent of U.S. streams have medium to high levels of nitrogen and phosphorus.
- 2) 78 percent of assessed coastal waters exhibit eutrophication.
- 3) Nitrate drinking water violations have doubled in eight years.

¹ *An Urgent Call to Action: Report of the State-EPA Nutrients Innovations Task Group*, August 2009.

2011 EPA Framework Memo



- Results oriented: build from existing state work, but accelerate progress and demonstrate results
- Gives states flexibility to achieve near-term reductions while working on numeric criteria
- Numeric criteria for a category of waters by 2016



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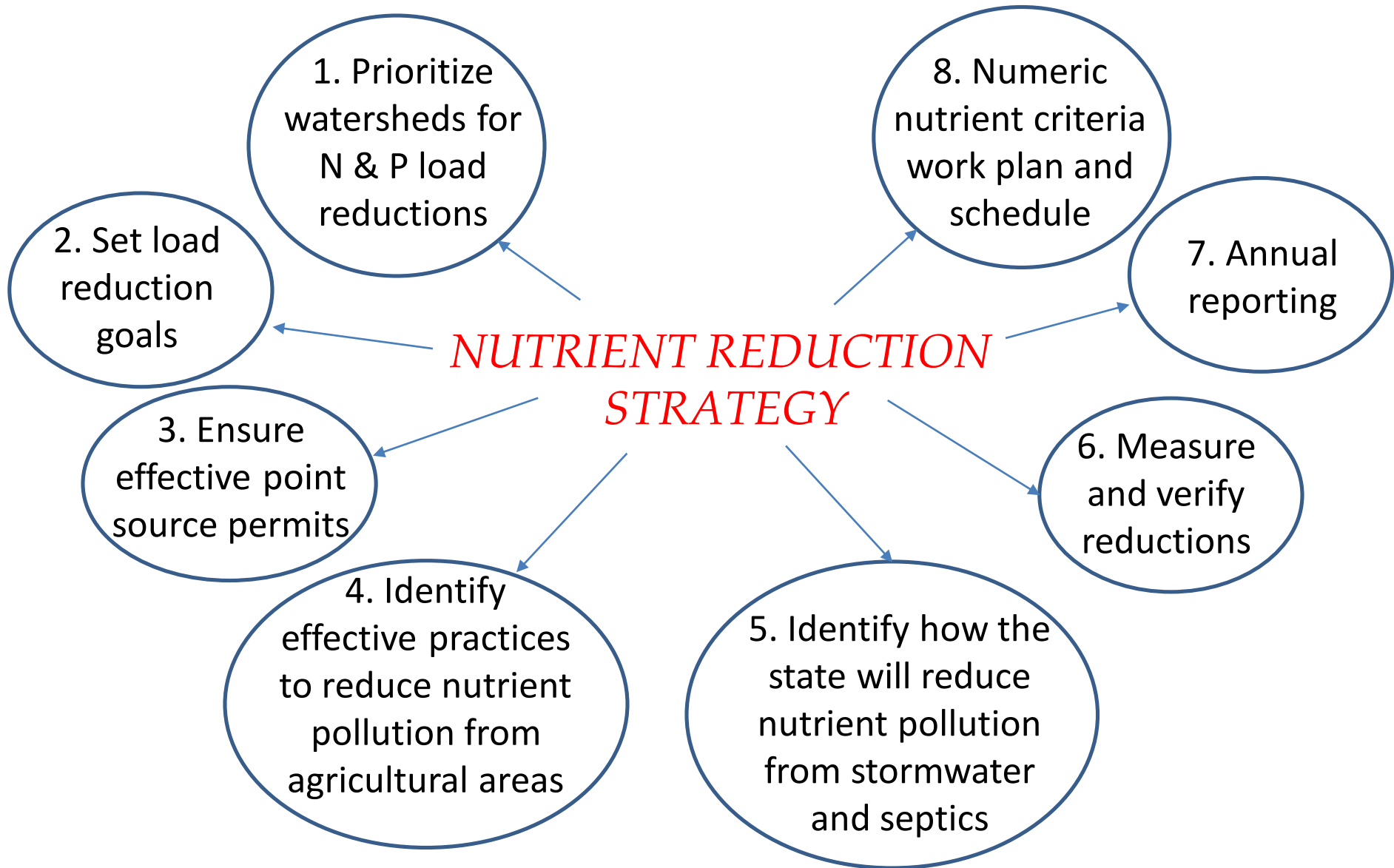
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Nutrient Reduction Strategy



What Is EPA Asking Us to Do?



- 2 Nutrient Related Performance Partnership Agreement (PPA) Commitments for FY15 (Oct. 1, 2014 – Sept. 30, 2015)
- PPA outlines state commitments to achieve public health and water quality goals for federally-delegated environmental programs (e.g., Clean Air Act, Clean Water Act)
- Maintain delegated authority of Clean Water Act



FY15 PPA Commitments



- # of States That Have ***Adopted*** Numeric Nutrient Criteria: Nitrogen and Phosphorus for Lakes/Reservoirs and Rivers/Streams
 - In FY13, we updated nutrient criteria database and developed a plan to fill data gaps in lakes/reservoir dataset
 - In FY13, FY14 we conducted monitoring specifically for development of numeric nutrient criteria
 - In FY15, we will collect additional data for numeric nutrient criteria
 - Revising *Nutrient Criteria Development Plan* (mostly timeframes)

FY15 PPA Commitments



- # States Making Progress Toward Reducing Nitrogen and Phosphorus Pollution on Watershed Basis and Establishing Nutrient Reduction Targets, and Continuing to Make Progress, with Performance Milestone Information, Towards Adoption of Numeric Nutrient Criteria for at least one class of water by 2016.

Measure Tracked With Three Concepts:

- 1) Priority Setting
- 2) Setting Nutrient Reduction Targets in Each Targeted/Priority Sub-Watershed
- 3) Developing Nutrient Criteria.

FY15 PPA Commitments



- To date, have identified 303(d) Listed waters with suspected/known nutrient impairments for nutrient reduction
 - Gillette Fishing Lake (total phosphorus)
 - Belle Fourche River (ammonia)
 - Hams Fork (pH impairment below WWTP)
- Wyoming established a Nutrient Work Group to assist state in prioritizing watersheds and identifying additional nutrient reduction targets.

Nutrient Work Group



- Help DEQ address nutrient pollution in Wyoming through development and implementation of nutrient reduction strategy and development and implementation of numeric nutrient criteria
 - Reduction Strategy:
 - Evaluate elements, develop plan, assist in implementation of plan
 - Criteria Development:
 - prioritize waters for criteria development
 - evaluate approaches to criteria development
 - how to incorporate into standards
 - expectations/off-ramps for wastewater facilities
 - assessment methods for nutrient impairments

Nutrient Work Group



- Entities impacted by and interested in nutrients in Wyoming

- Agriculture

- Business

- Conservation Districts

- Environmental Groups

- Industry (Mining, Oil and Gas)

- Local Governments

- Technical Experts

- Land and Resource Management

- DEQ (Watershed, Water/Wastewater, WYPDES)

- Governor's Office

Wastewater Representatives

- Mechanical Plants

- Lagoons

- Rural Water

Drinking Water

- Facilities that Use Surface Water

- EPA

Nutrient Reduction Strategy



FEEDBACK: Facilitator for development of nutrient reduction strategy?

EPA can provide a contractor to assist the state in development of a nutrient reduction strategy or any of the components of a nutrient reduction strategy.

Approximately 16 states have utilized this contractor for assistance in developing components of a nutrient reduction strategy

Funding has ranged from \$20,000 to \$57,000; some states have had multiple contracts/projects

Questions?



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Nutrient Criteria Development Plan

Plan Components, Updates



Wyoming Nutrient Work Group

May 28, 2015

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Nutrient Criteria Development Plan



6.0 SCHEDULE OF NUTRIENT CRITERIA DEVELOPMENT

6.1 Schedule and Milestones for Lakes and Reservoirs

2008-2010

- Inventory of existing lake and reservoir data
- Data compilation into integrated database
- Literature review for lake and reservoir nutrient criteria

2011

- Analysis of existing lake and reservoir data
- Design and implementation of additional data collection for lakes and reservoirs

2012

- Additional lake and reservoir sampling

2013

- Develop proposed lake and reservoir nutrient criteria

2015

- Stakeholder Review of Lake and Reservoir Nutrient Criteria

Nutrient Criteria Development Plan



6.2 Schedule and Milestones for Streams and Rivers

2008-2010

- Inventory of existing data
- Data compilation into an integrated database
- Ongoing sampling of streams and rivers

2011

- Continue sampling of streams and rivers
- Analysis of existing data
- Design and implementation of supplemental data collection

2012

- Continue sampling of streams and rivers
- Evaluation of other stream and river classes (large rivers)
- Design and implementation, if needed, of sampling program for other stream and river classes

2012–2013

- Continue sampling of streams and rivers

2014

- Develop proposed nutrient criteria for wadeable streams and rivers

2015

- Stakeholder review of nutrient criteria for wadeable streams and rivers
- Continued sampling as needed

Nutrient Criteria Development Plan



- Proposed Changes:
 - Update approaches (add modeling, dose-response studies)
 - Update timeframes (added flexibility)
 - Increase flexibility in approaches for deriving criteria – multiple lines of evidence
- Send revised plan to work group for review
- Discuss plan and obtain feedback at next meeting
- Finalize updates to plan

Questions?



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